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BEEFING UP BIOSECURITY

Highly Pathogenic Avian Influenza in dairy herds is telling of biosecurity needs in beef herds.

On March 25, the U.S. Department of Agriculture (USDA), the Food and Drug Administration (FDA) and the Center for Disease Control (CDC) announced the first reports of highly pathogenic avian influenza (HPAI) H5N1 infections in dairy cattle.

"Beef producers need to keep their eyes and ears open," advises Kansas Animal Health Commissioner and State Veterinarian Justin Smith, DVM. While there are no reports of HPAI in beef cattle as of early May, he reminds "beef are bovine, and there is no reason to think there isn't an opportunity for this virus to impact our beef industry."

The H5N1 strain of the influenza A virus first appeared in U.S. commercial turkey and egg laying operations in February 2022, and has since affected nearly 91 million birds, including wild birds. In the previous HPAI H5N2 outbreak from 2014 to 2015, more than 50 million birds were culled.

Though much about the rapidly evolving H5N1 strain is under speculation, health officials confirm dairy cattle were infected by wild birds. When, why and how that mutation happened, remains unknown.

The first reported cases in dairy cattle originated in the Texas Panhandle and southwest Kansas. Facility-to-facility spread is believed to be mechanical — perhaps via service workers or truck conveyance. Recent evidence suggests there could be a respiratory component to the transmission. It should be noted, that recently diagnosed HPAI in dairy cows, and the exact transmission method of the virus is not fully understood.

To date, HPAI targets mid-to-late lactation dairy cows. Theories explaining why this class of animals is susceptible to infection include the combination of age with heavy lactation stress, as well as their proximity in tight quarters.

Symptoms are subtle, like low appetite, reduced milk production and abnormal milk appearance. In fact, biometrics on health and feed intake from electronic collars were first to detect the slight variances that prompted health officials to investigate. The virus was then located in mammary glands and raw milk.

Addressing concerns about consumer confidence in a safe milk supply, Dr. Smith assures in the efficacy of the food safety inspection program. "The pasteurized milk ordinance has been very effective, and it hasn't failed us to this point," he says. "There's no reason to think that the pasteurization process won't inactivate this virus."

The FDA also issued an affirmation the commercial milk supply is safe on April 26, after a national sampling study confirmed pasteurization inactivates HPAI in milk.

"We have to caveat that raw milk consumption doesn't carry that same level of assurance," he adds. "We're highly recommending people reevaluate their raw milk consumption at this point in time."

To keep the spread at bay, the USDA Animal and Plant Health Inspection Service (APHIS) issued an order on April 29 requiring lactating dairy cattle to test negative for the virus prior to interstate travel. Laboratories and state veterinarians are required to report positive results to USDA-APHIS.

STEPPING UP SECURITY

While biosecurity planning doesn't eliminate outbreak altogether, it significantly reduces disease spread. Case in point, HPAI transfer from facility to facility during this outbreak is considerably less than in 2014 and 2015 due to tighter security.

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Similarly, lines of defense in the swine industry have paid off tremendously in containing viruses like porcine reproductive and respiratory syndrome (PRRS) and porcine epidemic diarrhea (PED).

With these results, Smith says the proof is in the pudding that biosecurity planning is equally important for beef producers. "The best way to survive any one of these diseases is to not get the disease in the first place," he says. "Biosecurity planning does that. It mitigates that risk."

In efforts to safeguard against a foot and mouth disease (FMD) outbreak in the U.S., a USDA-funded cooperation of universities and producers developed the Secure Beef Supply (SBS) plan for business continuity. This template is designed for individual facilities to voluntarily establish their own biosecurity plan.

"Now is the time to implement a plan if you haven't already," Smith urges. In the face of fire, he warns there will not be time nor staff available to approve and rubberstamp a plan. If a disease threat is severe enough, state animal health authorities could initiate a stop order on all livestock transportation. Those with an SBS plan will be among the first allowed to transport livestock once that order has lifted.

To get started on an SBS plan, work with a veterinarian attuned to the process. The first step toward an approved plan is to obtain a premise ID number from the state animal health commission. Each commission is the approval source for an SBS plan.

There is also an SBS plan for feedyards to ensure continuity at the packing level during an outbreak. But, the plan does not have a traceability component. Smith sees a lot of value in U.S. CattleTrace for that reason. "The service they're going to provide in an outbreak is going to be instrumental," he says.

Also a voluntary program, U.S. CattleTrace collects data for disease traceability through RFID tags. Unlike the beef industry, almost every dairy animal is electronically tagged. And if HPAI does get bad for dairy herds, Smith says that industry is well poised to trace outbreaks because of that traceability component.

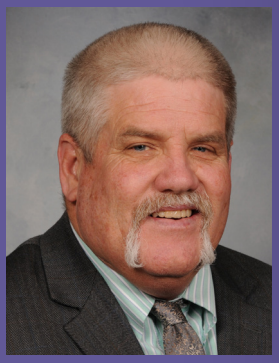
"The concept of electronically monitoring these tags greatly diminishes the errors that are associated with it [record keeping] and the speed and retrievability of it," he says.

And from a deniability standpoint, tag metrics can also prove animals were not involved in an outbreak, allowing an operation to function as normal.

With much to learn about HPAI, and the possibility it will mutate to cause adverse effects in beef production, Smith suggests taking security precautions outlined in the Beef Quality Assurance (BQA) manual that were developed under SBS guidance.

"I can't stress enough the importance of a secure food supply plan," he says. ◆

Justin Smith, DVM



Serving as the Kansas Animal Health Commissioner and State Veterinarian, Justin Smith, DVM, leads a team of animal health officials at the Kansas Department of Agriculture Division of Animal Health. Dr. Smith and this agency oversee regulatory issues, disease surveillance and management and disease emergency response and preparedness.

The Kansas native earned his bachelor's and Doctor of Veterinary Medicine degrees from Kansas State University. In his latest role, he uses his range of experiences gained from over 15 years as a large animal veterinarian practitioner, 10-plus years as a manager of a large cow-calf/stocker ranch, and service as a livestock production extension agent.

During his tenure as the Animal Health Commissioner, Kansas has been a leader and innovator when it comes to response planning for a large-scale animal disease event. He currently lives in Manhattan, Kansas, with his wife, Donna, surrounded by grandkids. He enjoys the outdoors, hobby farming and watching the grandkids excel.

HELPFUL LINKS

Secure Beef Supply:
securebeef.org

Kansas Department of Agriculture:
agriculture.ks.gov

U.S. CattleTrace:
uscattletrace.org

USDA HPAI detections in livestock:
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